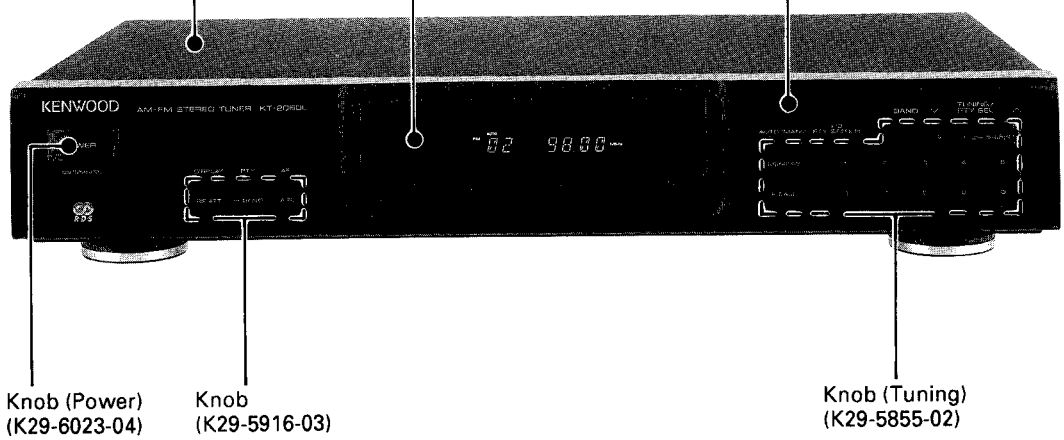
STEREO TUNER

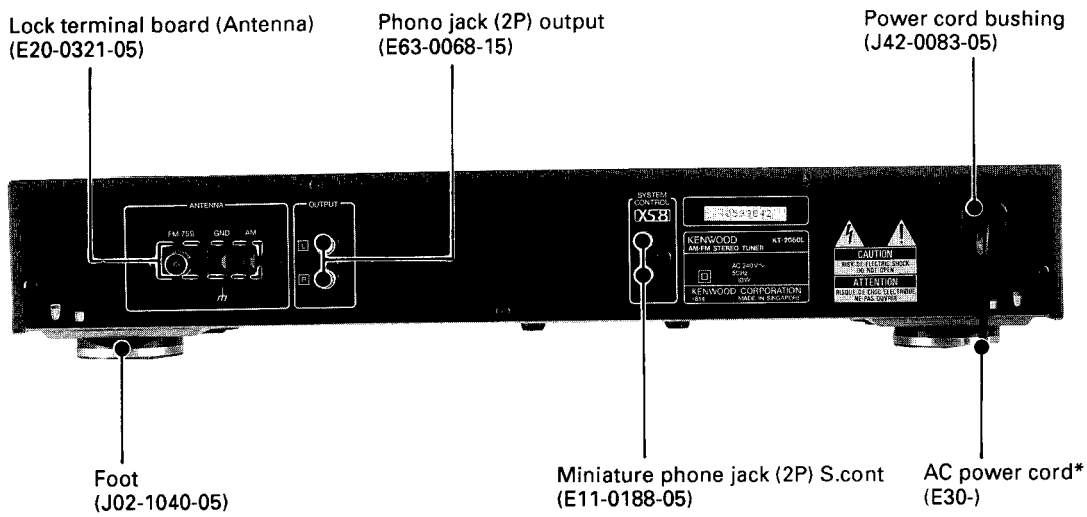
KT-2060L

SERVICE MANUAL

KENWOOD

© 1994-9 PRINTED IN KOREA
B51-4906-00 (K) 1977





***Refer to parts list on page 18.**

KT-2060L

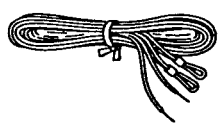
CONTENTS/ACCESSORIES

CONTENTS

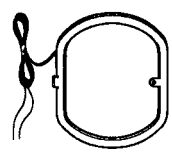
ACCESSORIES 2
CONTROL 3
BLOCK DIAGRAM 4
CIRCUIT DESCRIPTION
1. Test Mode 5
2. μ-com : μPD78044AGF-044 (X05-, A/3 : IC9) 7
ADJUSTMENT 10
PC BOARD (COMPONENT SIDE VIEW) 11
SCHEMATIC DIAGRAM 13
EXPLODED VIEW 17
PARTS LIST 18
SPECIFICATIONS ..... BACK COVER

ACCESSORIES

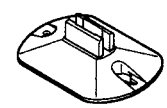
- FM indoor antenna 1
  (T90-0175-05)



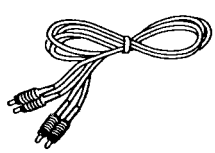
- AM loop antenna ass'y 1
  (T90-0195-05)



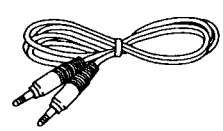
Loop antenna stand
(J19-3645-05)



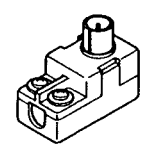
- Audio cord 1
  (E30-0505-05)



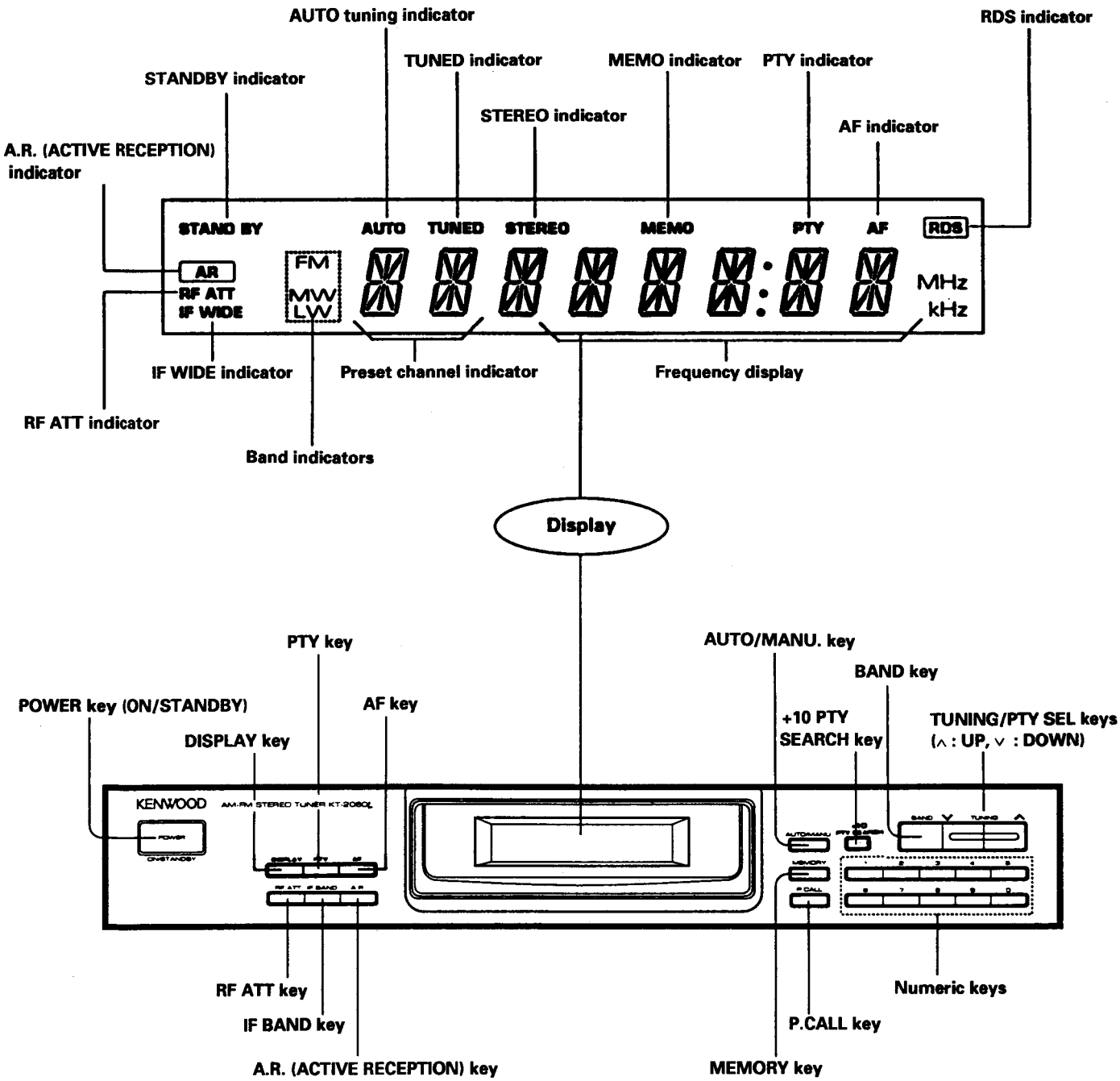
- System control cord 1
  (E30-2733-05)



- Antenna adaptor 1
  (T90-0185-05)

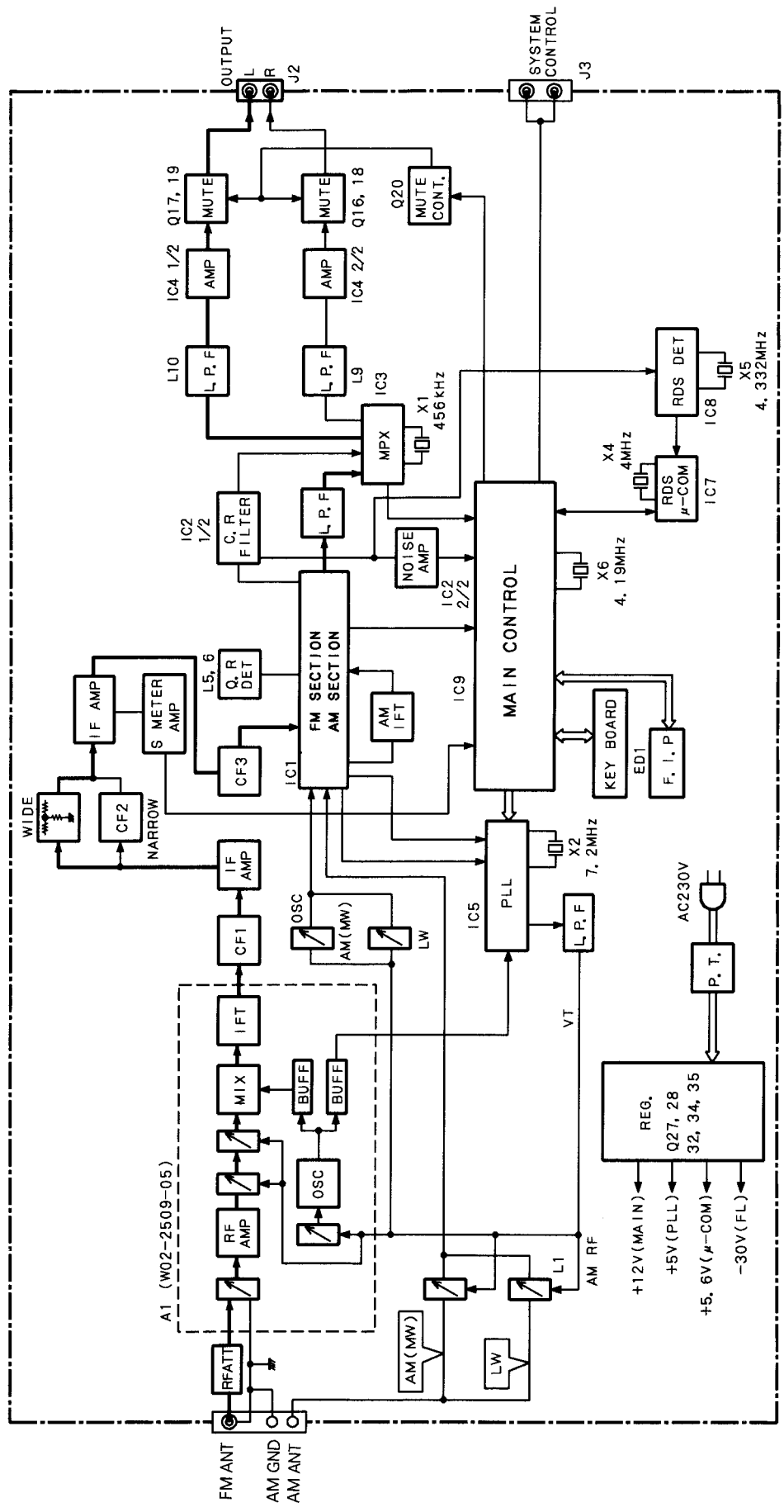


CONTROL


AUTO tuning indicator
RDS indicator
TUNED indicator
MEMO indicator
PTY indicator
STANDBY indicator
STEREO indicator
AF indicator
A.R. (ACTIVE RECEPTION) indicator
STAND BY
AUTO
TUNED
STEREO
MEMO
PTY
AF
RDS
AR
RF ATT
IF WIDE
FM
MW
LW
MHz
kHz
IF WIDE indicator
Preset channel indicator
Frequency display
RF ATT indicator
Band indicators
Display
PTY key
AUTO/MANU. key
BAND key
POWER key (ON/STANDBY)
AF key
+10 PTY SEARCH key
TUNING/PTY SEL keys
(∧ : UP, ∨ : DOWN)
DISPLAY key
KENWOOD
RF ATT key
IF BAND key
A.R. (ACTIVE RECEPTION) key
Numeric keys
P.CALL key
MEMORY key

KT-2060L

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

For "Test frequency" and "Conditions by destination", refer to the service manual of T-601 (B51-4913-00).

1. Test mode

1-1. Test mode with the main unit keys

a) Setting procedure

- While pressing the DOWN key, plug the AC power cord to the power outlet.

b) Cancellation

- Unplug the AC power cord. The initial setting will take effect and the test mode will be canceled.

c) Description

Auto POWER ON

- When the AC power cord is plugged while pressing the DOWN key, the POWER will turn ON and all function will be at the initial setting.

ALL LED ON mode

- When the AC power cord is plugged while pressing the DOWN key, all the LEDs will turn ON. Any key operation on the main unit thereafter will return the LEDs to normal.

Main unit key validity check

- Whether the main unit's keys are operable (valid) can be checked. Regarding the keys whose display does not change when they are used, their display will be made to change.

0~9, +10 key operation

- Preset display : "– –" or "01" ~ "09"
  When "0" key is pressed, 10 ch is called.
  When "1" ~ "9" key is pressed, 1 ch ~ 9 ch is called.
  When "+10" key is pressed, "1 -" is displayed.
- Preset display : "1 –" or "10" ~ "19"
  When "0" key is pressed, 20 ch is called.
  When "1" ~ "9" key is pressed, 11 ch ~ 19 ch is called.
  When "+10" key is pressed, "2 -" is displayed.
- Preset display : "2 –" or "20" ~ "29"
  When "0" key is pressed, 30 ch is called.
  When "1" ~ "9" key is pressed, 21 ch ~ 29 ch is called.
  When "+10" key is pressed, "3 -" is displayed.
- Preset display : "3 –" or "30" ~ "39"
  When "0" key is pressed, 10 ch is called.
  When "1" ~ "9" key is pressed, 31 ch ~ 39 ch is called.
  When "+10" key is pressed, "0 –" is displayed.

Preset channel UP / DOWN

- Use the TUNING UP / DOWN key to adjust Preset channel UP / DOWN.
  UP : 1 ch → 2 ch ... 39 ch → 1 ch ...
  DOWN : 39 ch → 38 ch ... 1 ch → 39 ch ...

MUTE signal output

- The MUTE signal is not output.

1-2. Test mode with serial communications

Refer to the test mode serial code table.

a) Setting procedure

- Plug the AC power cord and enter the TEST ON code.
  8 bit serial communications : 71H
  16 bit serial communications : C2FFH

b) Cancellation

- Enter the TEST OFF code or unplug the AC power cord.
  8 bit serial communications : 70H
  16 bit serial communications : C2FEH

c) Description

Other operations during the serial test mode

- The main unit's keys will be effective.
- The serial test code can be received even within 1 second of POWER ON / OFF.

Required operations for the serial test mode

- The serial code for the serial test mode can be used to check the operation of all circuits.
- The code entered during the serial test mode will become valid regardless of the display mode.
- The following functions are available in the serial test mode.
  0 ~ 9, +10
  AUTO (AUTO ST. / MONO)
  MEMORY
  UP / DOWN (MANUAL SCAN unnecessary)
  IF BAND, RF switching
  ACTIVE RECEPTION
  AF, PTY, DISPLAY
- When a PRESET CH is called up and the SD detection prevention timer ends, a specific serial code will be output.
  Tuned : TUNED ON
  Not tuned : TUNED OFF
- The MUTE signal is not output. This is for reducing the input-output switching time during the measurement.

CIRCUIT DESCRIPTION

- When a valid serial code for the test mode is received, the code identical to the code entered will be output.
- For checking the MUTE operation, MUTE has specific codes.
  MUTE ON/OFF
- To switch cyclically, enter the individual serial code. For example for AUTO STEREO / MONO, enter the two codes for AUTO STEREO and MONO.
- All the LEDs will turn ON. ALL LED ON is cancelled by inputting the cancelling code and returned the LEDs to normal.
- All functions (including the test mode) will be initialized.

1-3. Initial settings

a) Setting procedure

- If the unit has a back-up function, hold down the POWER key and plug the AC power cord.
- During the test mode with the main unit keys and the test mode with serial communications, the initial settings can be obtained by unplug and plug the AC power cord.

b) Description

- All function (including test mode) will be initialized.
- The manufacturer's memory is always set in the preset CH and area.

1-4. POWER ON startup

- Since the unit has a POWER key, no setting is required.

1-5. Initial status and back-up status

Mode		Status	Back-up
Power		OFF	YES
Last band		FM	YES
Last frequency	FM	87.5MHz	YES
	AM & MW	CH space 9kHz : 531 kHz CH space 10kHz : 530kHz	
	LW	153kHz	
Last P. ch		- - ch	YES
P. ch memory		Test frequency	YES
Tuning mode		Auto	YES
Active reception		OFF	YES
RF ATT		OFF	YES
IF BAND		WIDE	YES

1-6. 8-bit serial test code (XXH)

	4	5	6	7
0	POWER OFF	0	MEMORY	TEST OFF
1	POWER ON	1		TEST ON
2	MUTE OFF	2		
3	MUTE ON	3		
4	AUTO STEREO	4	AF	
5	MONO	5	PTY	
6	TUNED OFF	6	DISPLAY	
7	TUNED ON	7		
8	Active reception OFF	8		
9	Active reception ON	9		
A	RF ATT OFF	+10		
B	RF ATT ON	BAND FM		All LED goes OFF
C	IF WIDE	BAND AM/MW		All LED goes ON
D		BAND LW		All LED ON : OFF
E	IF NARROW	TUNING DOWN		All LED ON : ON
F		TUNING UP		Initial setting

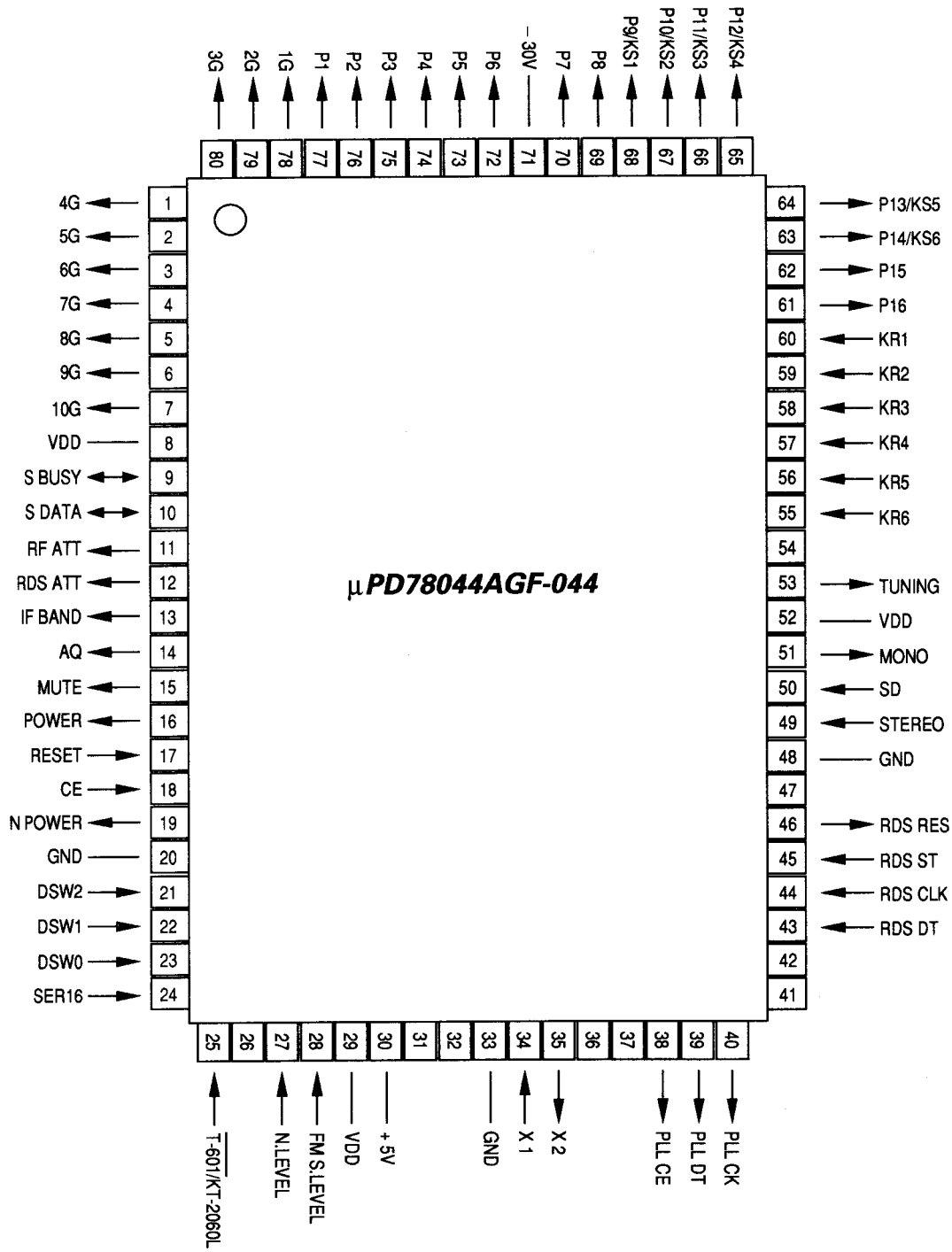
16-bit serial test code (C2XXH)

	8	9	A	.....	F
0	POWER OFF	0	MEMORY		
1	POWER ON	1			
2	MUTE OFF	2			
3	MUTE ON	3			
4	AUTO STEREO	4	AF		
5	MONO	5	PTY		
6	TUNED OFF	6	DISPLAY		
7	TUNED ON	7			
8	Active reception OFF	8			
9	Active reception ON	9			All LED goes OFF
A	RF ATT OFF	+10			All LED goes ON
B	RF ATT ON	BAND FM			All LED ON : OFF
C	IF WIDE	BAND AM/MW			All LED ON : ON
D		BAND LW			Initial setting
E	IF NARROW	TUNING DOWN			TEST OFF
F		TUNING UP			TEST ON

CIRCUIT DESCRIPTION

2. Microprocessor : μPD78044AGF-044 (X05-, A/3 : IC9)

2-1. Pin connection



CIRCUIT DESCRIPTION

2-2. Pin function

No.	Name	I/O	Description
1	4G	O	FL grid
2	5G	O	FL grid
3	6G	O	FL grid
4	7G	O	FL grid
5	8G	O	FL grid
6	9G	O	FL grid
7	10G	O	FL grid
8	VDD	--	Power supply terminal for μ-com
9	S BUSY	I/O	8 bit serial communication BUSY terminal
10	S DATA	I/O	8 bit serial communication DATA terminal
11	RF ATT	O	RF ATT control H: ATT OFF L: ATT ON
12	RDS ATT	O	RDS ATT control H: ATT OFF L: ATT ON
13	IF BAND	O	IF BAND control H: NARROW L: WIDE
14	AQ	O	Auto quieting H : S. level 1.6 over L : S. level 1.6 under
15	MUTE	O	MUTE H: MUTE OFF L: MUTE ON
16	POWER	O	POWER H: POWER ON L: POWER OFF
17	RESET	I	μ-com reset
18	CE	I	μ-com CE L: μ-com stop mode
19	N POWER	O	$\overline{\text{POWER}}$ H: POWER OFF L: POWER ON
20	GND	--	A / D power supply
21	DSW2	I	Destination switch 2 input port Refer to "Conditions by destination".
22	DSW1	I	Destination switch 1 input port Refer to "Conditions by destination".
23	DSW0	I	Destination switch 0 input port Refer to "Conditions by destination".
24	SER16	I	Serial 8 bit / 16 bit input port H: 16 bit L: 8 bit
25	$\overline{\text{T-601}}$/KT-2060L	I	Model switching H: KT-2060L L: T-601
26			Not used. Pull down to VSS
27	N. LEVEL	I	Noise level A / D input
28	FM S. LEVEL	I	FM signal level A / D input
29	VDD	--	A / D power supply
30	+ 5V	--	A / D reference power supply
31			Not used.
32			Not used.
33	GND	--	A / D power supply
34	X1	I	Oscillator (4.19 MHz)
35	X2	O	Oscillator (4.19 MHz)
36			Not used. Pull down to VSS
37			Not used. Pull down to VSS
38	PLL CE	O	PLL IC CE
39	PLL DT	O	PLL IC DATA
40	PLL CK	O	PLL IC CLOCK

CIRCUIT DESCRIPTION

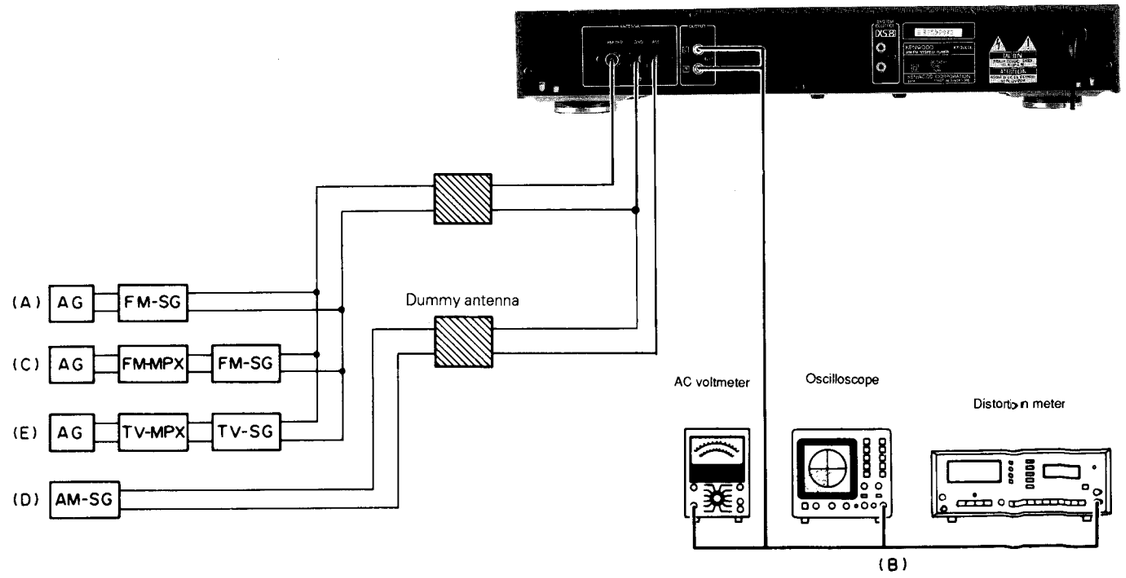
No.	Name	I/O	Description		
41			Not used. Pull down to VSS		
42			Not used. Pull down to VSS		
43	RDS DT	I	RDS DATA		
44	RDS CLK	I	RDS CLOCK		
45	RDS ST	I	RDS START		
46	RDS RES	O	RDS RESET		
47			Not used. Pull down to VSS		
48	GND	– –	Connected to VSS		
49	STEREO	I	STEREO detection	H: MONO	L: STEREO
50	SD	I	SD detection	H: TUNED OFF	L: TUNED ON
51	MONO	O	MONO detection	H: MONO	L: AUTO STEREO
52	VDD	– –	Power supply terminal for μ-com		
53	TUNING	O	TUNING port		
54			Not used. Pull down to VSS		
55	KR6	I	Key return 6		
56	KR5	I	Key return 5		
57	KR4	I	Key return 4		
58	KR3	I	Key return 3		
59	KR2	I	Key return 2		
60	KR1	I	Key return 1		
61	P16	O	FL segment		
62	P15	O	FL segment		
63	P14 / KS6	O	FL segment / Key scan 6		
64	P13 / KS5	O	FL segment / Key scan 5		
65	P12 / KS4	O	FL segment / Key scan 4		
66	P11 / KS3	O	FL segment / Key scan 3		
67	P10 / KS2	O	FL segment / Key scan 2		
68	P9 / KS1	O	FL segment / Key scan 1		
69	P8	O	FL segment		
70	P7	O	FL segment		
71	– 30V	– –	– 30V power supply for FL drive		
72	P6	O	FL segment		
73	P5	O	FL segment		
74	P4	O	FL segment		
75	P3	O	FL segment		
76	P2	O	FL segment		
77	P1	O	FL segment		
78	1G	O	FL grid		
79	2G	O	FL grid		
80	3G	O	FL grid		

KT-2060L

ADJUSTMENT

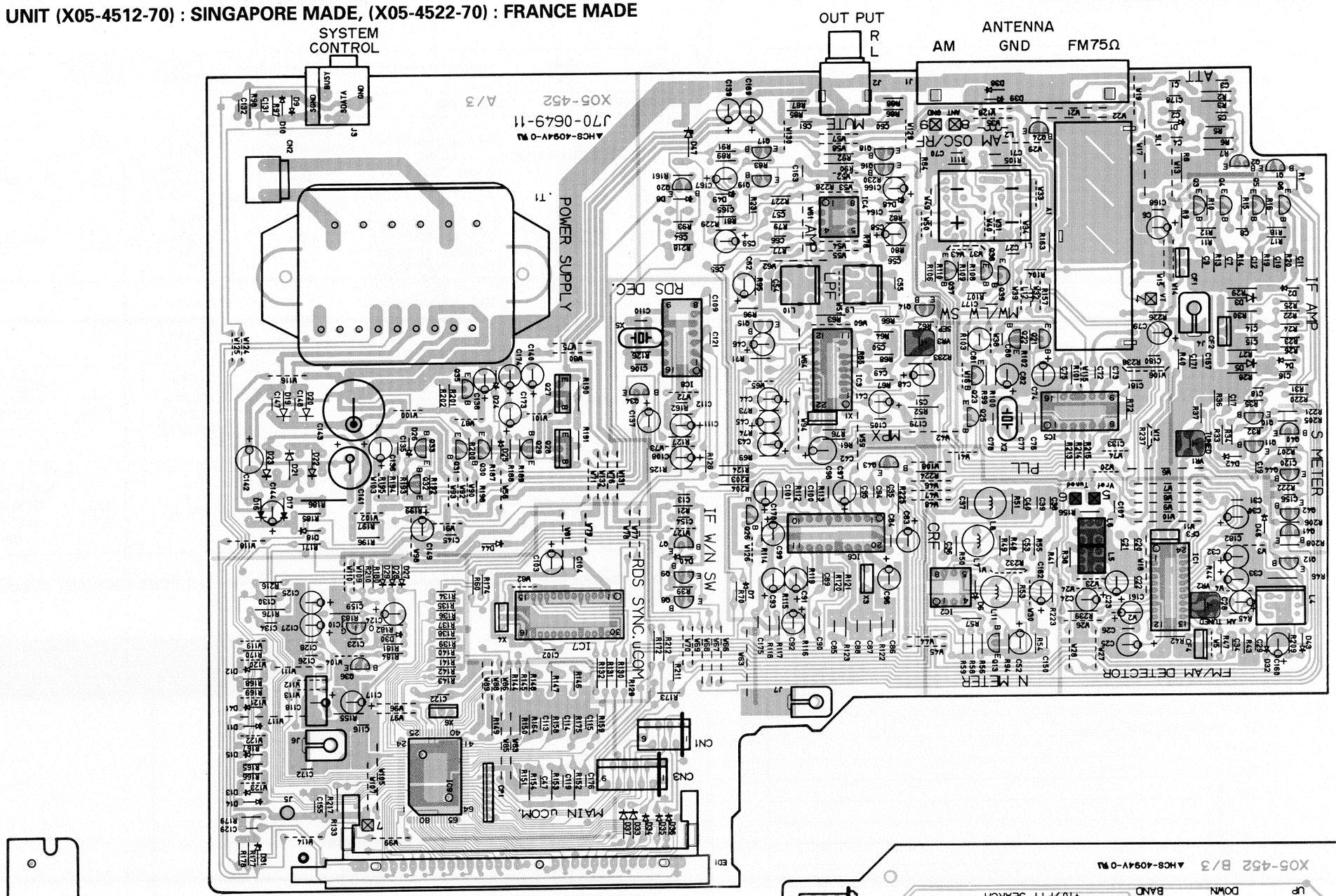
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION		**BAND : FM**					
1	DISCRIMINATOR	(A) 98.0 MHz (84 MHz) MONO 1 kHz, 75 kHz dev 80 dBμ (ANT input)	Connect a DC voltmeter between TP5 and TP6 (X05-)	AUTO or MONO 98.0 MHz (84 MHz)	L5 (X05-)	0 V ± 30 mV	(a)
					L6 (X05-)	Minimum distortion	
2	DISTORTION (STEREO)	(C) 98.0 MHz (84 MHz) 1 kHz,±68.25kHzdev Selector : L or R 80 dBμ (ANT input)	(B)	AUTO 98.0 MHz (84 MHz)	IFT (W02-)	Minimum distortion	
3	SEPARATION	(C) 98.0 MHz (84 MHz) 1 kHz,±68.25kHzdev Selector : L or R 80 dBμ (ANT input)	(B)	AUTO 98.0 MHz (84 MHz)	VR3 (X05-)	Minimum crosstalk	
4	TUNING LEVEL	(A) 98.0 MHz (84 MHz) MONO 1 kHz, ± 75 kHz dev 14 dBμ (ANT input)	(B)	AUTO or MONO 98.0 MHz (84 MHz)	VR1 (X05-)	Adjust VR1 and stop at the point where ED1 (TUNED) goes ON.	
AM SECTION		**BAND : AM (MW)**					
1	TUNING LEVEL	(D) 999 kHz MONO 400 Hz, 30% mod 28 dBμ (ANT input)	(B)	999 kHz	VR2 (X05-)	Adjust VR2 and stop at the point where ED1 (TUNED) goes ON.	

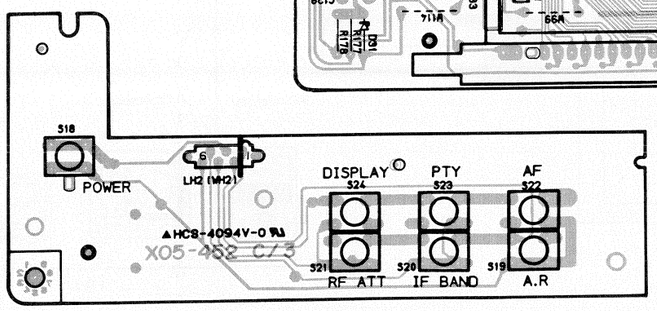
When TUNER PCB (X05-) is disconnected from main unit, connect PCB's GND (ANT shield plate) and main unit chassis using aligator clip. Then, check TUNER PCB.

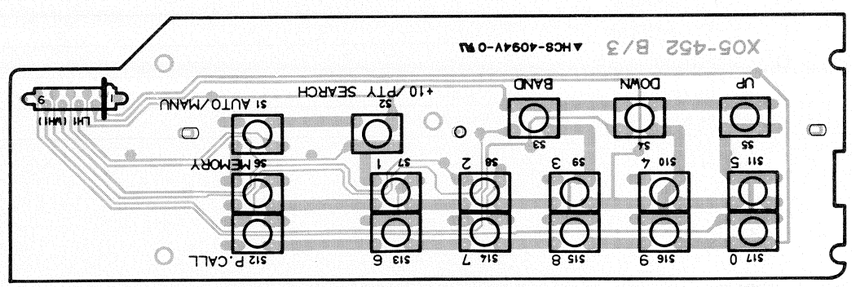


PC BOARD (COMPONENT SIDE VIEW)

TUNER UNIT (X05-4512-70) : SINGAPORE MADE, (X05-4522-70) : FRANCE MADE







Refer to the schematic diagram for the values of resistors and capacitors.

(X05-4512-70)(E, G, T)(A/3) SINGAPORE MADE
TUNER UNIT (X05-4522-70)(E, G, T)(A/3) FRANCE MADE

A1 FM FRONT END (W02-2509-05)

TR1 :2SC2714:90~140hfe
TR2 :2SC2996
TR3 :2SC2715
D1~4 :SVC212
IFT :R12 P194A
FET :2SK302

IC1	:LA1267	Q1, 7, 13 14, 30, 31	:DTC124ES	D1~18, 25 27~30 32~44, 46	:1SS133 or HSS104
IC2, 4	:NJM4565D-D	Q2, 8, 12, 23	:DTA124ES	D19, 20	:S5688B or 1SR139-100
IC3	:LA3401	Q3~6, 9~11	:2SC1740S(Q, R) or 2SC2785(F, E)	D21~23	:1SS131 or HSS104A
IC5	:LM7001	Q15~19, 22, 29 33, 34, 36		D24	:MZS13N(B2) FRANCE :MTZJ13(B) or RD13ES(B2) SINGAPORE
IC7	:LC6543H-4D68	Q20. 24	:2SA933S(Q, R) or 2SA1175(F, E)	D26, 31	:RD5, 1JS(B2) or HZS5, 1S(B2)
IC8	:SAA6579	Q21, 42, 44	:2SC1845(F, E)	D47~49	:RD11JS(B)
IC9	:UPD78044AGF-044	Q27, 28	:2SD2061(E, F) or 2SD2012	ED1	:10-BT-141G
IC10	:S-80740AL	Q32, 35	:2SC3940A(R, S)		
		Q37~39	:2SD1302(S, T)		
		Q40, 41	:2SA992(F, E)		

E F G H I J K L M N O

TUNED 6 5 VREF

Q3-6 IF AMP

WIDE:0.2V NARROW:10.9V

Q7-9 IF W/N SW

Q10,11 IF AMP

Q40-42,44 S METER

IC3 FM MPX

VOL REG | OSC | PHASE COMPARATOR | PILOT DET | LAMP DRIVER | SYMMETRICAL REACTANCE CIRCUIT | VCO STOP | TRIGGER | FF | FF 38KHzz | FF 19KHz -90° | FF 19KHz -0° | STEREO SWITCH | MUTING CONTROL FM AM CHANGE OVER | MUTING OUTPUT | DECODER | MUTING FM AM CHANGE | VCC ON MUTING

MONO SW AUTO:2.9V MONO:0V

Q15 ST:0.6V

Q16-20 MUTE

IC4 1/2 | IC4 2/2

FM/AM SW

IC1 FM/AM TUNER

OSC BUFF. | OSC | REG | RF | MIX | AGC | AM-IF | DET | S METER | NARROW S METER | AM TUNED

FM-IF | Q.D | LED DRIVER | POST AMP | IF BUFF. | IF BUFF.

IC2 2/2

FM +B SW

MW/LW SW

Q14 SEP. WIDE:1.6V NARROW:0V

IF W/N SW

NOISE SW

IC2 1/2

D46

IC8 RDS DATA SYSTEM DEMODULATOR

ANTI-ALIASING FILTER | 57kHz BANDPASS (8th ORDER) | RECONSTRUCTION FILTER | OSCILLATOR AND DIVIDER | CLOCKED COMPARATOR | CONSTAS LOOP VARIABLE AND FIXED DIVIDER | BIPHASE SYMBOL DECODER | DIFFERENTIAL DECODER | REFERENCE VOLTAGE | CLOCK REGENERATION AND SYNC | TESTLOGIC AND OUTPUT SELECTOR SWITCH | QUALITY BIT GENERATOR

IC9 (BOTTOM VIEW) μ-COM

RESET IC IC10

RESET

Q35 5.0V AVR PLL

Q34 5.0 AVR RDS

POWER :ON 5.0V :OFF 0V

K L M N O P Q R S T U

MONO SW
AUTO: 2, 9V
MONO: 0V
Q15
ST: 0. 6V
VOL REG
OSC
PHASE COMPARATOR
PILOT DET
LAMP DRIVER
SYMMETRICAL REACTANCE CIRCUIT
VCO STOP
TRIGGER
FF 38KHz
FF 19KHz 4°90'
FF 19KHz 4°0'
STEREO SWITCH
MUTING CONTROL FM AM CHANGE OVER
MUTING OUTPUT
DECODER
MUTING FM AM CHANGE
VCC ON MUTING
SEP.
WIDE: 1. 6V
NARROW: 0V
IF W/N SW
IC4 1/2
IC4 2/2
OUTPUT
Q16-20 MUTE
IC2 1/2
IC9
(BOTTOM VIEW)
μ-COM
X6 4. 19M
CP1 10KX7
S-80740AL
D44
D7
D8
D27
D28
D29
D36
D35
D34
D33
D37
D11
D12
J6
J2
J3
CN1 WH2
CN3 WH1
X05-(C/3)
X05-(B/3)
DISPLAY
PTY
AF
RFATT
IFBAND
AR
POWER
AUTO/MANU
+10
BAND
DOWN
UP
MEMORY
P. CALL
Q27-29 12V AVR
Q35 5. 0V AVR PLL
Q34 5. 0 AVR RDS
Q32, 33 5. 6V AVR
Q30, 31 12V POWER ON/OFF
POWER :ON 5. 0V :OFF 0V
T1
L07-1810-05
CN2
AC16V
AC3. 6V
AC
(E, G)230V (T)240V
SIGNAL LINE
RDS LINE
GND LINE
+B LINE
−B LINE

2SA992
2SC1845
2SC3940A
2SD1302

2SA1175
2SC2785

DTA124ES
DTC124ES
2SA933S
2SC1740S

2SD2061

2SD2012

NJM4565D-D

LM7001

SAA6579

LA1267

LA3401

S-80740AL

CAUTION : For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). ⚠ Indicates safety critical components. To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

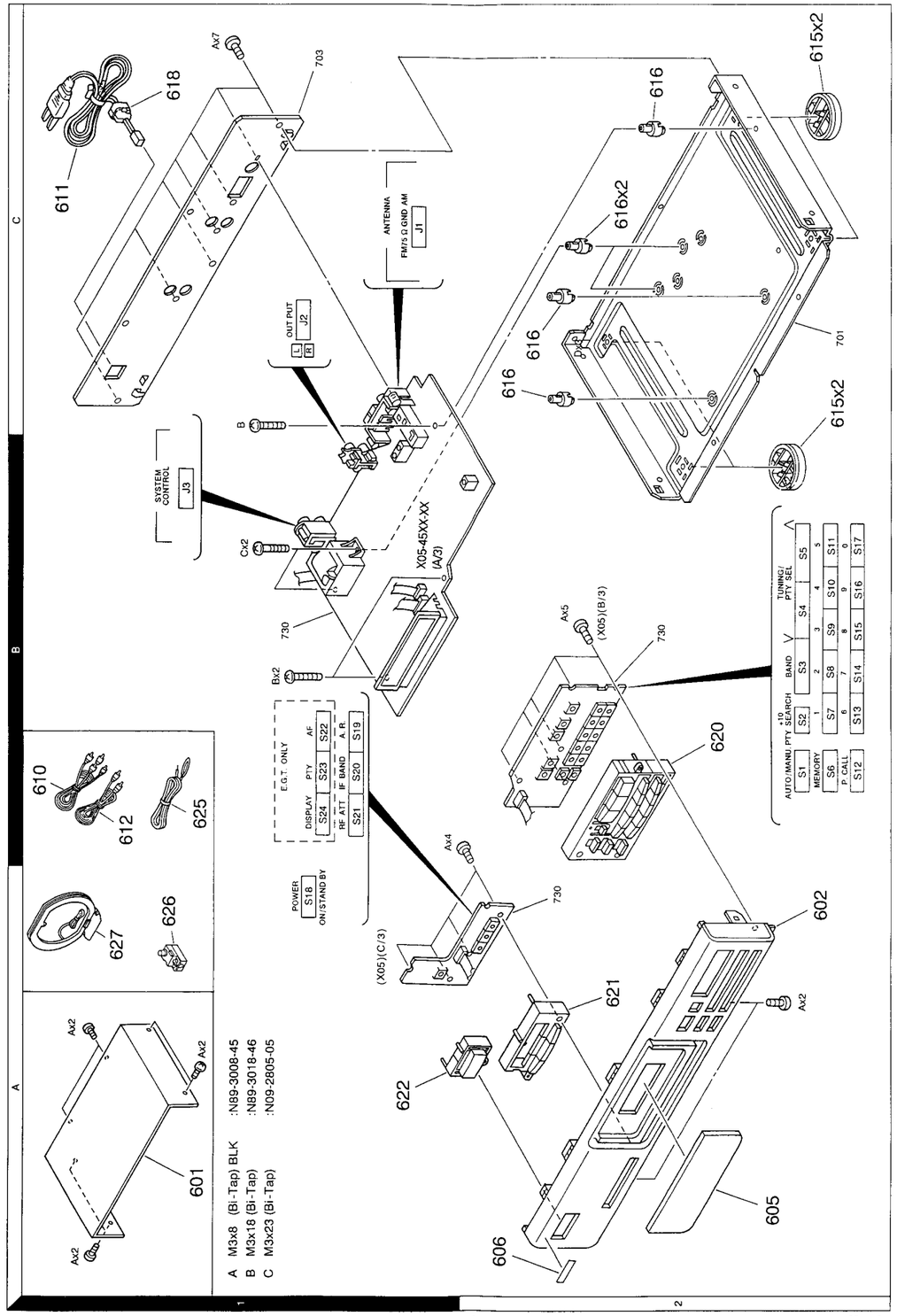
• DC voltages are as measured with a high impedance voltmeter during reception of an FM broadcast signal (with a signal strength of 60dB at the ANT terminal). Values may vary slightly due to variations between individual instruments or/ and units. Values in parentheses are as measured during reception of an AM broadcast signal (with a signal strength of 60dB at the ANT terminal).

Y07-3682-70

KT-2060L

KENWOOD

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
	KT-2060L : SINGAPORE MADE						
	601	1A		A01-3105-01	METALLIC CABINET		
	602	2A	*	A60-0573-11	PANEL		
	605	2A	*	B03-2892-13	DRESSING PLATE		
	606	2A		B43-0287-04	KENWOOD BADGE		
	-			B46-0310-03	WARRANTY CARD		
	-			B58-0945-03	CAUTION CARD	T	
	-		*	B58-0965-13	CAUTION CARD (PTX TYPE PL)	T	
	-		*	B58-0966-13	CAUTION CARD (ELM TYPE PL)	E	
	-		*	B58-0970-13	CAUTION CARD (RG TYPE PL)	G	
	-		*	B60-1789-00	INSTRUCTION MANUAL(EN)	ET	
	-		*	B60-1790-00	INSTRUCTION MANUAL(G)	EG	
	-		*	B60-1791-00	INSTRUCTION MANUAL(F/D/I)	E	
	610	1B		E30-0505-05	AUDIO CORD		
⚠	611	1C		E30-2592-15	AC POWER CORD	EG	
⚠	611	1C		E30-2721-05	AC POWER CORD	T	
	612	1B		E30-2733-05	CORD WITH PLUG		
			*	H50-1272-14	ITEM CARTON CASE	EG	
			*	H50-1273-04	ITEM CARTON CASE	T	
	-			H10-5711-02	POLYSTYRENE FOAMED FIXTURE		
	-		*	H12-2222-04	PACKING FIXTURE	T	
	-			H25-0223-04	PROTECTION BAG (750X350X0.03)	EG	
	-			H25-0232-04	PROTECTION BAG (235X350X0.03)	EG	
	-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
	-			H25-0652-04	PROTECTION BAG (0223 PRINTED)	T	
	615	2C		J02-1040-05	FOOT		
	616	2B,2C		J19-3657-14	UNIT HOLDER		
⚠	618	1C		J42-0083-05	POWER CORD BUSHING		
	620	2B		K29-5855-02	KNOB TUNING		
	621	2A	*	K29-5916-03	KNOB RF ATT/IF BAND/A.R.		
	622	1A	*	K29-6023-04	KNOB POWER		
	A	1A,1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
	B	1B,1C		N89-3018-46	BINDING HEAD TAPTITE SCREW		
	C	1B		N09-2805-05	TAPTITE SCREW		
	625	1B		T90-0175-05	T TYPE ANTENNA		
	626	1A		T90-0185-05	ANTENNA ADAPTOR		
	627	1A		T90-0195-05	LOOP ANTENNA		
	KT-2060L (FRANCE MADE)						
	601	1A		A01-3105-01	METALLIC CABINET		
	602	2A	*	A60-0573-11	PANEL		
	605	2A	*	B03-2892-13	DRESSING PLATE		
	606	2A		B43-0287-04	KENWOOD BADGE		
	-			B46-0310-03	WARRANTY CARD		
	-			B58-0945-03	CAUTION CARD	T	
	-		*	B58-0965-13	CAUTION CARD (PTX TYPE PL)	T	
	-		*	B58-0966-13	CAUTION CARD (ELM TYPE PL)	E	
	-		*	B58-0970-13	CAUTION CARD (RG TYPE PL)	G	
	-		*	B60-1789-00	INSTRUCTION MANUAL(EN)	ET	
	-		*	B60-1790-00	INSTRUCTION MANUAL(G)	EG	
	-		*	B60-1791-00	INSTRUCTION MANUAL(F/D/I)	E	
	610	1B		E30-0505-05	AUDIO CORD		

L: Scandinavia **K**: USA **P**: Canada **R**: Mexico
Y: PX (Far East, Hawaii) **T**: England **E**: Europe **G**: Germany
Y: AAFES (Europe) **X**: Australia **M**: Other Areas

⚠ indicates safety critical components.

PARTS LIST

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
⚠	611	1C		E30-2592-15	AC POWER CORD	EG	
⚠	611	1C		E30-2721-05	AC POWER CORD	T	
	612	1B		E30-2733-05	CORD WITH PLUG		
			*	H50-1146-04	ITEM CARTON CASE	EG	
			*	H50-1147-04	ITEM CARTON CASE	T	
	-			H10-5712-02	POLYSTYRENE FOAMED FIXTURE		
	-			H11-0051-04	POLYSTYRENE FOAMED BOARD	T	
	-			H13-0134-04	CARTON BOARD	T	
	-			H25-0223-04	PROTECTION BAG (750X350X0.03)	EG	
	-			H25-0232-04	PROTECTION BAG (235X350X0.03)	EG	
	-			H25-0651-04	PROTECTION BAG (0232 PRINTED)	T	
	-			H25-0652-04	PROTECTION BAG (0223 PRINTED)	T	
	615	2C		J02-1040-05	FOOT		
	616	2B,2C		J19-3657-14	UNIT HOLDER		
⚠	618	1C		J42-0083-05	POWER CORD BUSHING		
	620	2B		K29-5855-02	KNOB TUNING		
	621	2A	*	K29-5916-03	KNOB RF ATT/IF BAND/A.R.		
	622	1A	*	K29-6023-04	KNOB POWER		
	A	1A,1C		N89-3008-45	BINDING HEAD TAPTITE SCREW		
	B	1B,1C		N89-3018-46	BINDING HEAD TAPTITE SCREW		
	C	1B		N09-2805-05	TAPTITE SCREW		
	625	1B		T90-0175-05	T TYPE ANTENNA		
	626	1A		T90-0185-05	ANTENNA ADAPTOR		
	627	1A		T90-0195-05	LOOP ANTENNA		
	TUNER UNIT : X05-45XX-XX (12-70 : SINGAPORE MADE, 22-70 : FRANCE MADE)						
	C1			CK45FB1H102K	CERAMIC 1000PF K		
	C2			CC45FSL1H010C	CERAMIC 1.0PF C		
	C3 -5			CK45FB1H102K	CERAMIC 1000PF K		
	C6			CE04LW1C470MCC	ELECTRO 47UF 16WV		
	C7 -22			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C23			CE04LW1C470MCC	ELECTRO 47UF 16WV		
	C24			CE04LW1H0R1MCC	ELECTRO 0.1UF 50WV		
	C25			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		
	C26			CC45FSL1H100D	CERAMIC 10PF D		
	C27			CK45FF1H223Z	CERAMIC 0.022UF Z		
	C28		*	CE04LW1V4R7MCC	ELECTRO 4.7UF 35WV		
	C29			CK45FF1H473Z	CERAMIC 0.047UF Z		
	C30			CE04LW1V100MCC	ELECTRO 10UF 35WV		
	C31			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C32			CE04LW1H2R2MCC	ELECTRO 2.2UF 50WV		
	C33		*	CE04LW1V4R7MCC	ELECTRO 4.7UF 35WV		
	C34			CK45FF1H103Z	CERAMIC 0.010UF Z		
	C35			CK45FF1H473Z	CERAMIC 0.047UF Z		
	C36			CC45FSL1H121J	CERAMIC 120PF J		
	C37			CC45FSL1H271J	CERAMIC 270PF J		
	C38			CK45FB1H471K	CERAMIC 470PF K		
	C39			CF92FV1H162J	MF 1600PF J		
	C40			CF92FV1H132J	MF 1300PF J		
	C41		*	CE04LW1V4R7MCC	ELECTRO 4.7UF 35WV		
	C42			CE04LW1C221MCC	ELECTRO 220UF 16WV		
	C43 ,44			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		
	C45		*	CE04LW1HR22MCC	ELECTRO 0.22UF 50WV		
	C46			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		

L: Scandinavia **K**: USA **P**: Canada **R**: Mexico
Y: PX (Far East, Hawaii) **T**: England **E**: Europe **G**: Germany
Y: AAFES (Europe) **X**: Australia **M**: Other Areas

⚠ indicates safety critical components.

PARTS LIST

× New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C47			CK45FF1H103Z	CERAMIC 0.010UF Z		
C48			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C49 ,50			CF92FV1H102J	MF 1000PF J		
C51			CK45FB1H561K	CERAMIC 560PF K		
C52			CE04LW1H0R1MCC	ELECTRO 0.1UF 50WV		
C53			CK45FB1H471K	CERAMIC 470PF K		
C54 ,55			CF92FV1H392J	MF 3900PF J		
C56 ,57			CC45FSL1H101J	CERAMIC 100PF J		
C58 ,59			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C60 ,61			CK45FB1H391K	CERAMIC 390PF K		
C62			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C64			CK45FF1H103Z	CERAMIC 0.010UF Z		
C70			CC45FSL1H150J	CERAMIC 15PF J		
C71			CK45FF1H473Z	CERAMIC 0.047UF Z		
C72 ,73			CK45FF1H103Z	CERAMIC 0.010UF Z		
C74			CE04LW1A101MCC	ELECTRO 100UF 10WV		
C75			CK45FF1H103Z	CERAMIC 0.010UF Z		
C76 ,77			CC45FCH1H270J	CERAMIC 27PF J		
C78			CC45FSL1H221J	CERAMIC 220PF J		
C79			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		
C80			CK45FF1H223Z	CERAMIC 0.022UF Z		
C81			CE04HW1H010M	NP-ELEC 1.0UF 50WV		
C82			CE04LW1C470MCC	ELECTRO 47UF 16WV		
C102			CK45FF1H103Z	CERAMIC 0.010UF Z		
C103			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C104			CK45FF1H103Z	CERAMIC 0.010UF Z		
C105			CF92FV1H104J	MF 0.10UF J		
C106			CC45FCH1H470J	CERAMIC 47PF J		
C107			CC45FSL1H220J	CERAMIC 22PF J		
C108			CE04LW1H2R2MCC	ELECTRO 2.2UF 50WV		
C109			CK45FB1H561K	CERAMIC 560PF K		
C110			CC45FCH1H220J	CERAMIC 22PF J		
C111			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C112			CK45FF1H103Z	CERAMIC 0.010UF Z		
C113-115			CC45FSL1H221J	CERAMIC 220PF J		
C116			CK45FF1H223Z	CERAMIC 0.022UF Z		
C117			CE04LW1A101MCC	ELECTRO 100UF 10WV		
C118			C90-1826-05	BACKUP 0.047F 5.5WV		
C119			CC45FSL1H221J	CERAMIC 220PF J		
C120			CK45FF1H103Z	CERAMIC 0.010UF Z		
C121			CC45FSL1H331J	CERAMIC 330PF J		
C122,123			CK45FF1H103Z	CERAMIC 0.010UF Z		
C124,125			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		
C126			CK45FF1H103Z	CERAMIC 0.010UF Z		
C127			CE04LW1H010MCC	ELECTRO 1.0UF 50WV		
C128			CK45FF1H103Z	CERAMIC 0.010UF Z		
C129			CF92FV1H222J	MF 2200PF J		
C130			CK45FF1H103Z	CERAMIC 0.010UF Z		
C131,132			CC45FSL1H221J	CERAMIC 220PF J		
C133			CF92FV1H104J	MF 0.10UF J		
C134			CK45FF1H103Z	CERAMIC 0.010UF Z		
C135			CK45FB1H102K	CERAMIC 1000PF K		
C136-138			CE04LW1C220MCC	ELECTRO 22UF 16WV		
C139			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C140			CE04LW1C220MCC	ELECTRO 22UF 16WV		

L: Scandinavia **K**: USA **P**: Canada **R**: Mexico
Y: PX (Far East, Hawaii) **T**: England **E**: Europe **G**: Germany
Y: AAFES (Europe) **X**: Australia **M**: Other Areas

⚠ indicates safety critical components.

PARTS LIST

＊ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
C141			CE04LW1H331MCC	ELECTRO 330UF 50WV		
C142			CE04LW1E101MCC	ELECTRO 100UF 25WV		
C143		*	CE04LW1E222MCC	ELECTRO 2200UF 25WV		
C144		*	CE04LW1V4R7MCC	ELECTRO 4.7UF 35WV		
C145			CK45FF1H103Z	CERAMIC 0.010UF Z		
C147,148			CF92FV1H273J	MF 0.027UF J		
C149			CE04LW1C220MCC	ELECTRO 22UF 16WV		
C150			CF92FV1H104J	MF 0.10UF J		
C155-157			CK45FF1H103Z	CERAMIC 0.010UF Z		
C159			CK45FF1H103Z	CERAMIC 0.010UF Z		
C160		*	CE04LW1HR22MCC	ELECTRO 0.22UF 50WV		
C161			CE04LW1C220MCC	ELECTRO 22UF 16WV		
C162			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C163			CF92FV1H273J	MF 0.027UF J		
C164,165			CF92FV1H102J	MF 1000PF J		
C166,167			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C168			CK45FF1H103Z	CERAMIC 0.010UF Z		
C169			CE04LW1V100MCC	ELECTRO 10UF 35WV		
C171,172			CK45FF1H103Z	CERAMIC 0.010UF Z		
C177			CC45FSL1H101J	CERAMIC 100PF J		
C178			CK45FF1H103Z	CERAMIC 0.010UF Z		
C179			CK45FB1H391K	CERAMIC 390PF K		
J1			E20-0321-05	LOCK TERMINAL BOARD ANTENNA		
J2			E63-0068-15	PHONO JACK(2P) OUTPUT		
J3			E11-0188-05	MINIATURE PHONE JACK(2P)S.CONT		
J5			J11-0098-05	WIRE CLAMPER		
CF1			L72-0536-05	CERAMIC FILTER		
CF2			L72-0566-05	CERAMIC FILTER		
CF3			L72-0536-05	CERAMIC FILTER		
CF4			L72-0096-05	CERAMIC FILTER		
L1			L39-1325-05	COMBINATION COIL		
L2			L40-2291-17	SMALL FIXED INDUCTOR(2.2UH)		
L4			L30-0467-05	AM IFT		
L5			L30-0484-05	FM IFT		
L6			L30-0485-05	FM IFT		
L7			L40-5625-29	SMALL FIXED INDUCTOR(5.6MH,J)		
L8			L40-6825-29	SMALL FIXED INDUCTOR(6.8MH,J)		
L9 ,10			L79-0790-05	LC FILTER		
L11			L40-6825-29	SMALL FIXED INDUCTOR(6.8MH,J)		
L12			L40-1011-17	SMALL FIXED INDUCTOR(100UH,K)		
⚠ T1		*	L07-1810-05	POWER TRANSFORMER		
X1			L78-0208-05	RESONATOR (456kHz)		
X2			L77-1122-05	CRYSTAL RESONATOR(7.2MHz)		
X4			L78-0244-05	RESONATOR (4.000M)		
X5			L77-2002-05	CRYSTAL RESONATOR(4.332MHz)		
X6			L78-0267-05	RESONATOR (4.194MHz)		
CP1			R90-0815-05	MULTI-COMP 10K X7		
R8			RD14GB2E390J	FL-PROOF RD 39 J 1/4W		
⚠ R186			RS14KB3D471J	FL-PROOF RS 470 J 2W		
R190,191			RD14NB2E1R0J	RD 1.0 J 1/4W		
R228,229			RN14BK2C1003F	RN 100K F 1/6W		
VR1			R12-0606-05	TRIMMING POT.(330)TUNED		
VR2			R12-3687-05	TRIMMING POT.(33K)AM TUNED		

L:Scandinavia **K**:USA **P**:Canada **R**:Mexico
Y:PX (Far East, Hawaii) **T**:England **E**:Europe **G**:Germany
Y:AAFES (Europe) **X**:Australia **M**:Other Areas

⚠ indicates safety critical components.

KT-2060L

PARTS LIST

＊ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
VR3			R12-3686-05	TRIMMING POT.(22K)SEP.		
S1 -24			S40-1064-05	PUSH SWITCH		
D1 -15			HSS104	DIODE		
D1 -15			1SS133	DIODE		
⚠ D16 -18			HSS104	DIODE		
⚠ D16 -18			1SS133	DIODE		
⚠ D19 ,20			S5688B	DIODE		
⚠ D19 ,20			1SR139-100	DIODE		
⚠ D21 -23			HSS104A	DIODE		
⚠ D21 -23			1SS131	DIODE		
D24			HZS13N(B2)	ZENER DIODE		F
D24			MTZJ13(B)	ZENER DIODE		S
D24			RD13ES(B2)	ZENER DIODE		S
D25			HSS104	DIODE		
D25			1SS133	DIODE		
D26			HZS5.1S(B2)	ZENER DIODE		
D26			RD5.1JS(B2)	ZENER DIODE		
D27 -30			HSS104	DIODE		
D27 -30			1SS133	DIODE		
D31			HZS5.1S(B2)	ZENER DIODE		
D31			RD5.1JS(B2)	ZENER DIODE		
D32 -44			HSS104	DIODE		
D32 -44			1SS133	DIODE		
D46			HSS104	DIODE		
D46			1SS133	DIODE		
D47 -49			RD11JS(B)	ZENER DIODE		
ED1			10-BT-141G	INDICATOR TUBE		
IC1			LA1267	IC(AM/FM TUNER)		
IC2			NJM4565D-D	IC(OP AMP X2)		
IC3			LA3401	IC(FM MPX)		
IC4			NJM4565D-D	IC(OP AMP X2)		
IC5			LM7001	IC(PLL FREQUENCY SYNTHESIZER)		
IC7		*	LC6543H-4D68	MI-COM IC		
IC8		*	SAA6579	ANALOGUE IC		
IC9		*	UPD78044AGF-044	MI-COM IC		
IC10			S-80740AL	IC(VOLTAGE DETECTOR)		
Q1			DTC124ES	DIGITAL TRANSISTOR		
Q2			DTA124ES	DIGITAL TRANSISTOR		
Q3 -6			2SC1740S(Q,R)	TRANSISTOR		
Q3 -6			2SC2785(F,E)	TRANSISTOR		
Q7			DTC124ES	DIGITAL TRANSISTOR		
Q8			DTA124ES	DIGITAL TRANSISTOR		
Q9 -11			2SC1740S(Q,R)	TRANSISTOR		
Q9 -11			2SC2785(F,E)	TRANSISTOR		
Q12			DTA124ES	DIGITAL TRANSISTOR		
Q13 ,14			DTC124ES	DIGITAL TRANSISTOR		
Q15 -19			2SC1740S(Q,R)	TRANSISTOR		
Q15 -19			2SC2785(F,E)	TRANSISTOR		
Q20			2SA1175(F,E)	TRANSISTOR		
Q20			2SA933S(Q,R)	TRANSISTOR		
Q21			2SC1845(F,E)	TRANSISTOR		
Q22			2SC1740S(Q,R)	TRANSISTOR		
Q22			2SC2785(F,E)	TRANSISTOR		

L:Scandinavia **K**:USA **P**:Canada **R**:Mexico **S**:SINGAPORE MADE
Y:PX (Far East, Hawaii) **T**:England **E**:Europe **G**:Germany **F**:FRANCE MADE
Y:AAFES (Europe) **X**:Australia **M**:Other Areas

⚠ indicates safety critical components.

PARTS LIST

✳ New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnes dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

	Ref. No. 参照番号	Address 位置	New Parts 新	Parts No. 部品番号	Description 部品名／規格	Destination 仕向	Remarks 備考
	Q23			DTA124ES	DIGITAL TRANSISTOR		
	Q24			2SA1175(F,E)	TRANSISTOR		
	Q24			2SA933S(Q,R)	TRANSISTOR		
⚠	Q27 ,28			2SD2012	TRANSISTOR		
⚠	Q27 ,28			2SD2061(E,F)	TRANSISTOR		
	Q29			2SC1740S(Q,R)	TRANSISTOR		
	Q29			2SC2785(F,E)	TRANSISTOR		
	Q30 ,31			DTC124ES	DIGITAL TRANSISTOR		
	Q32			2SC3940A(R,S)	TRANSISTOR		
	Q33 ,34			2SC1740S(Q,R)	TRANSISTOR		
	Q33 ,34			2SC2785(F,E)	TRANSISTOR		
	Q35			2SC3940A(R,S)	TRANSISTOR		
	Q36			2SC1740S(Q,R)	TRANSISTOR		
	Q36			2SC2785(F,E)	TRANSISTOR		
	Q37 -39			2SD1302(S,T)	TRANSISTOR		
	Q40 ,41			2SA992(F,E)	TRANSISTOR		
	Q42			2SC1845(F,E)	TRANSISTOR		
	Q44			2SC1845(F,E)	TRANSISTOR		
	A1			W02-2509-05	FM FRONT-END ASSY		

L : Scandinavia **K** : USA **P** : Canada **R** : Mexico
Y : PX (Far East, Hawaii) **T** : England **E** : Europe **G** : Germany
Y : AAFES (Europe) **X** : Australia **M** : Other Areas

⚠ indicates safety critical components.

SPECIFICATIONS

FM tuner section

Reception frequency range ..... 87.5MHz~108MHz
Usable sensitivity (DIN at 75Ω)
MONO ..... 1µV / 11.2dBf
STEREO ..... 35µV / 42dBf
Total harmonic distortion (DIN at 1kHz)
MONO ..... 0.08% (65.2dBf input) (WIDE)
..... 0.15% (65.2dBf input) (NARROW)
STEREO ..... 0.3% (65.2dBf input) (WIDE)
Signal to noise ratio (DIN weighted at 1kHz)
MONO ..... 70dB (65.2dBf input)
STEREO ..... 63dB (65.2dBf input)
Stereo separation (DIN)
1kHz ..... 48dB (WIDE)
..... 35dB (NARROW)
Capture ratio ..... 2.0dB (WIDE)
Selectivity
(DIN ±300kHz) ..... 60dB (WIDE)
(DIN ±200kHz) ..... 55dB (NARROW)
Image rejection ratio (at 98MHz) 83dB
IF rejection ratio (at 98MHz) 100dB
Spurious rejection ratio (at 98MHz) 100dB
AM suppression ratio 68dB
Sub carrier suppression (DIN) ..... 55dB (at 19kHz)
..... 65dB (at 38kHz)
Frequency response (30Hz~15kHz) .... +0.5dB, –1.5dB
Output level / Impedance (FM at 1kHz, 75kHz dev)
Fixed ..... 0.8V / 1kΩ

MW tuner section

Reception frequency range ..... 531kHz~1,602kHz
Usable sensitivity ..... 12µV / (400µV/m)
Signal to noise ratio (at 30% mod. 1mV input) 50dB
Total harmonic distortion 0.3%
Image rejection ratio 30dB
Selectivity 30dB
Output level / Impedance
(at 30% mod. 1mV input) ..... 0.24V / 1kΩ

LW tuner section

Reception frequency range ..... 153kHz~279kHz
Usable sensitivity 22µV
Signal to noise ratio (at 30% mod. 1mV input) 47dB
Total harmonic distortion 0.6%
Image rejection ratio 27dB
Selectivity 33dB
Output level / Impedance
(at 30% mod. 1mV input) ..... 0.24V / 1kΩ

General

Power consumption 10W
Dimensions ..... W : 440 x H : 79 x D : 245 (mm)
Weight (Net) 2.4kg (5.3lb)

KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.

Note :
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the Europe (E) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

KENWOOD CORPORATION
14-6, Dogenzaka 1-chome, Shibuya-ku, Tokyo 150, Japan
KENWOOD SERVICE CORPORATION
P.O. BOX 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745, U.S.A.
KENWOOD ELECTRONICS CANADA INC.
6070 Kestrel Road, Mississauga, Ontario, Canada L5T 1S8
KENWOOD ELECTRONICS LATIN AMERICA S.A.
P.O. BOX 55-2791, Piso 6 Plaza Chase, Cl. 47 y Aquilino de la Guardia, Panama, Republic de Panama
TRIO-KENWOOD U.K. LIMITED
KENWOOD House, Dwight Road, Watford, Herts., WD1 8EB United Kingdom
KENWOOD ELECTRONICS BENELUX N.V.
Mechelsesteenweg 418 B-1930 Zaventem, Belgium
KENWOOD ELECTRONICS DEUTSCHLAND GMBH
Rembrücker-Str. 15, 63150 Heusenstamm, Germany
TRIO-KENWOOD FRANCE S.A.
13 Boulevard Ney, 75018 Paris, France
KENWOOD ELECTRONICS ITALIA S.p.A.
Via G. Sirtori, 7/9 20129 Milano, Italy
KENWOOD ESPAÑA S.A.
Bolivia, 239-08020 Barcelona, Spain
KENWOOD ELECTRONICS AUSTRALIA PTY LTD. (A.C.N. 001 499 074)
P.O. BOX 504, 8 Figtree Drive, Australia Centre, Homebush N.S.W. 2140, Australia
KENWOOD & LEE ELECTRONICS, LTD.
Unit 3712-3724, Level 37 Tower one, Metroplaza, 223 Hing Fong Road, Kwai Fong, N.T. Hong Kong
KENWOOD ELECTRONICS SINGAPORE PTE LTD.
No. 1 Genting Lane #07-00, KENWOOD Building, Singapore 1334
KENWOOD ELECTRONICS (MALAYSIA) SDN BHD.
10 th Floor, Block B, Wisma Semantan, No. 12, Jalan Gelenggang, Bukit Damansara, 50490 Kuala Lumpur, Malaysia